



Waves of the Future
Innovative Operations

Combat Boat 90 H

DOCKSTAVARVET

Docksta shipyard

CB 90 History

CB 90 Production

CB 90 HS

CB 90 HEX

IC 16M

Project 18 M





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Dockstavarvet



**Located on the Swedish East Coast
about 500 km north of Stockholm**

**Family owned company, founded in
1905 by the grandfather of the present
generation of boatbuilders in Docksta**

**Today the company is a leading
manufacturer on the international
market of aluminium boats for
professional use.**





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Dockstavarvet today

The first aluminium boat was built in 1969 and since then Dockstavarvet has built just more than 300 boats.

Foreign sales has grown and represents today some 70% of the turnover over a five-year period.

The first Combat Boat 90 H was built in 1989, with around 200 now in operation around the world.





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CB 90 history

- **Fast assault craft from DOCKSTAVARVET.**
- **CB 90 H design project.**
- The project was worked out in BUSHIPS of the Swedish Defence Materiel Administration (FMV) based on a Coast Artillery requirement to be able to transport 20 soldiers (Half a platoon incl. equipment = 2,8 tons or the corresponding weight in form of mines) at 30 knots in reasonable comfort and safety even in adverse weather conditions and to be able to make forceful landings on enemy held beaches. In addition there were stringent limitations on procurement and total life cycle costs.
- The general arrangement shows a typical high-speed chine form hull, with reverse sheer and a narrow 1-man landing ramp forward. The after 25% of the hull, behind an insulated watertight bulkhead, is given over to the machinery consisting of two 460 kW Scania DSI 14 diesel engines driving KaMeWa FF waterjets. A cabin with seating for 20 troops, together with their equipment, occupies the mid-body of the craft. The wheelhouse "module" is splinter protected and located between the troop compartment and the bow- ramp landing area. The space accommodates the helmsman to starboard and the skipper/navigator to port in a compact cockpit type layout with an extra chair in the centreline for an instructor/troop commander.



Prototype and serial construction

The prototype contract required DOCKSTAVARVET to do all the strength calculations and dimensioning as well as all engineering and construction drawings on the basis of the FMV project design and in close co-operation with a joint user/buyer project group. The first trials with CB 801 in September 1989, only 10 months after contract award, was an immediate success with the boat fulfilling all requirements with broad margins. The system test period was cut down from twelve to six months and Batch 1 (twelve boats) serial production started in September 1990.

For Batch 2 DOCKSTAVARVET teamed up with GOTLANDS VARV as co-operating partner and has so far received orders for 63 + 30 + 40 units bringing the total number ordered by the RSwn up to 147 units with final delivery 2003. The boats are deployed in three Amphibious Battalions forming the backbone of the new Amphibious Corps, RSwn.

CB 90 H





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Delivered variations on the standard Swedish version.

CB 90 N for the Royal Norwegian Navy

Modifications for the RNoN included increased fuel capacity, raised superstructures to give a free height of 2,0 meters in the transportroom, an extra watertight bulkhead at frame no 12, installation of a 5 kW genset and larger battery capacity to serve enhanced communication equipment plus a number of minor changes in outfit and installations. Additional add on modules included an hydraulic windlass installation, pressurised hot and cold water system and a toilet with holding tank.

The 20 boats are used as the main transport in five mobile Light Missile Batteries organised in the Norwegian Coast Artillery as replacement for fixed gun installation. Appropriately, the boats are all christened after old fort



CB 90 HL and CB 90 NL

Combat Boats fitted as command centre for the Swedish Amphibious Battalion and a Norwegian Light Missile Battery respectively.



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CB 90 NEX Demonstrator

Built for own account as a police/patrol boat version based on the CB 90 N but fitted with an accommodation with mess/pantry, a cabin with pullman sofas seating 10 pax or providing 2 + 2 upper/lower berths for the crew and the 230 V AC generator capacity increased to 6,5 kW. The prototype of this version, NB 415 ENFORCER was fitted with VOLVO PENTA TAMD 163 engines giving 2x750 hp and a top speed of 46 knots. Sold to ESTONIA in 1999 to be used as a Pilot Launch.

CB 90 HEX for the HELLENIC COAST GUARD (CB 90 HCG)

Three boats delivered in 1998 based on the CB 90 NEX but not including the raised superstructure. The boats were fitted with a combined cooling/heating system for the wheelhouse and accommodation areas. Further modifications included Armour Protection Level 4 covering the wheelhouse front and sides.

The electronic outfit was supplied by FURUNO and comprises a FR-8051/FMD-8000 twin display radar, GP-30 navigator, Ritchie MS-100 electronic compass, Taiyo TD-L1550A RDF as well as a FM-8500 VHF/DSC- and a FS-1562 /DSC-6A MF/HF-station. In addition there is a SIMRAD IS11 log/sounder system and EPIRB plus SART from McMurdo.

CB 90 H for ROYAL MALAYSIAN NAVY

Four standard CB 90 H direct from the running production for the Swedish Defence Materiel Administration were delivered to the Royal Malaysian Navy during 1999.





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CB 90 HEX for ARMADA DE MEXICO (CB 90 HMN)

The final batch of three units of a total of 40 boats of the CB 90 HEX version for the Mexican Navy was delivered in March 2001. The boats are fitted with 2 x CAT 3406 E main engines giving a sprint speed well over 45 knots, Transas navigation system, HoseMcCann intercom, a ONAN genset producing 7 kW, 115 V AC, 60 Hz and Marineair air conditioning.





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CB 90 HEX for ROYAL MALAYSIAN NAVY

The order for Mexico was followed by twelve similar boats for the Royal Malaysian Navy. The specification included the CAT 3406E engines, ONAN genset for 230 V AC and air conditioning.

The navigation system was based on the brand new FURUNO NavNet technology and incorporated also the SC-120 GPS compass system.

Intercom was supplied by PHONETECH.



CB 90 HS

The remaining 27 units for the RSwn Amphibious Corps currently in build will all be fitted for International Operations including modification for tropical conditions and full Armour Protection Level 4.



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- **CB 90 H** The original version for 20 men or 3 tons cargo. Fitted for 3 x 12,7 mm HMG.
- **CB 90 HL** CB 90 H fitted as a command boat with 9 operator positions.
- **CB 90 HS** CB 90 H modified for International Operations with full Armour Protection Level 4, genset and air condition.
- **CB 90 N** CB 90 H modified with raised superstructures, extra WT bulk -head, toilet and 6 kW 230 V AC diesel generator.
- **CB 90 NL** Command version for RNoN.
- **CB 90 NEX** CB 90 N fitted with accommodation for a crew of 4 men instead of troop compartment
- **CB 90 HEX** CB 90 NEX not including raised superstructure.
- **FC 90 +++** Alternative designation (FC = Fast Craft) indicating civilian version not including any foundations for arms.

<u>Country</u>	<u>Delivered</u>	<u>Ordered</u>	<u>License</u>
Sweden	143	4	
Norway	20		
Greece	3		
Malaysia	18		
Estonia	1		
Mexico	40		4
	225	4	4



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Weaponry

.50 cal - HMG



Weaponry

LEMUR - BOFORS

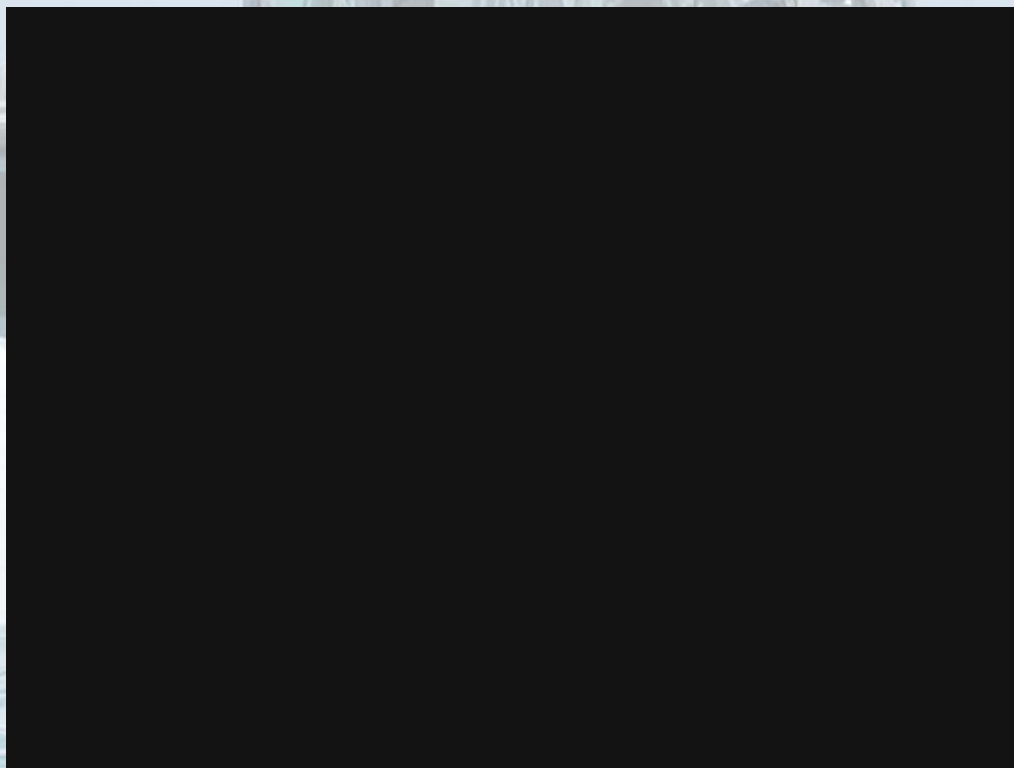




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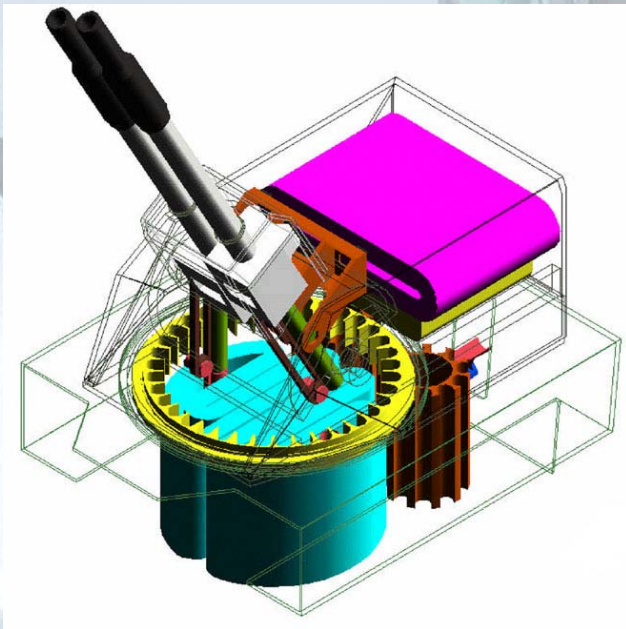
Weaponry

Hellfire – Rbs 17 SSM



Weaponry

ALVIS HÄGGLUNDS SSG 120 - AMOS



Land transportation....





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....sea transportation....





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....arrival at destination...





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...and going up the river.



CB 90 HS

Particulars

CB 90 HS is an all aluminium fast assault craft with bow ramp, heavily reinforced for forceful landing on unprepared beaches. The HS version is fitted with Armour Protection Level 4 (protection against calibre 7,62 fire) covering the wheelhouse, the transport room and the engine room.

Project design

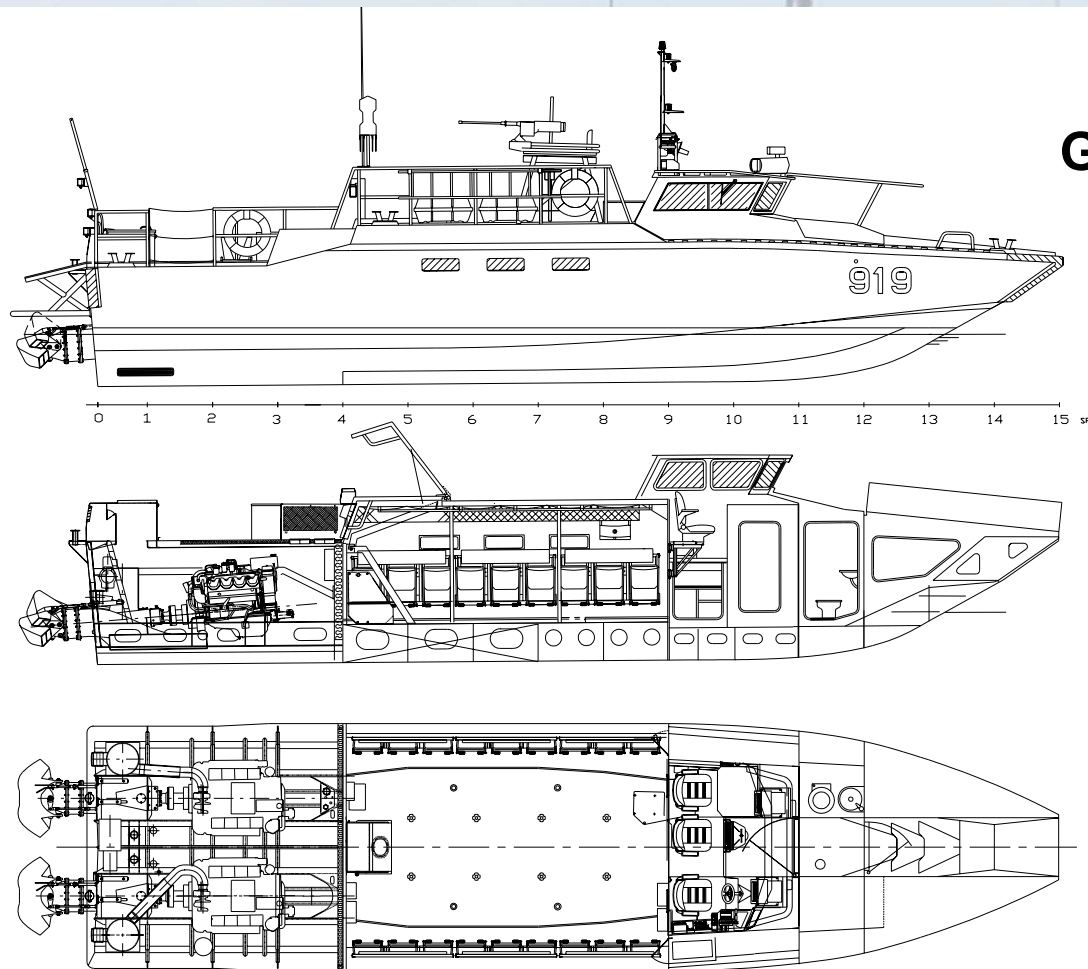
Petter Håkansson, Johan Björklund
The Swedish Defence Materiel
Administration

Construction drawings
DOCKSTAVARVET AB

Dimensions

LOA:	16,10 m	(54')
L, hull	14,90 m	(50')
LWL:	13,00 m	(43')
Beam:	3,80 m	(13')
Draught:	0,90 m	(3')
Displ. light	17,6 tons	
Displ. standard	19,8 tons	
Speed, cruising	> 35 knots	
Speed, sprint	> 40 knots	
Capacity:	18 fully equipped soldiers (145 kg each)	
Fuel cap:	2300 litres	
Range:	360 N.M.	

CB 90 HS
General Arrangement



CB 90 HEX

Particulars

CB 90 HEX is an all aluminium fast assault craft with bow ramp, heavily reinforced for forceful landing on unprepared beaches. 143 units has been delivered to the RSwN. Version 2002 is modified for patrol duties including crew accommodation, tropicalisation and bigger engines for higher speeds.

Project design

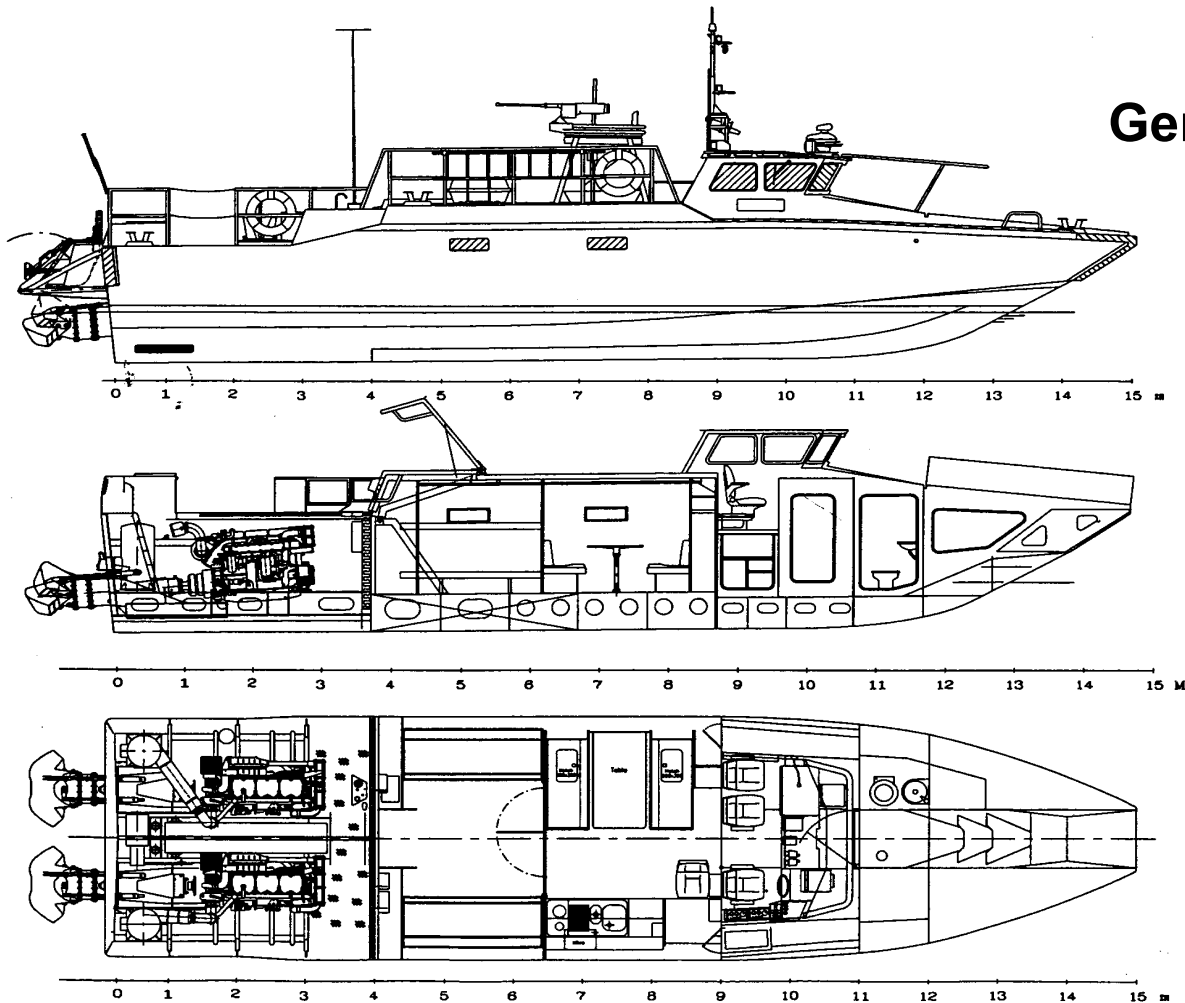
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LWL:	13,00 m	(43')
Beam:	3,80 m	(13')
Draught:	0,90 m	(3')
Displ. light	16,0 tons	
Displ. standard	18,6 tons	
Speed, cruising	> 40 knots	
Speed, sprint	> 45 knots	
Capacity:	8 pax + 1,3 ton or 2 tons	cargo
Fuel cap:	2300 litres	
Range:	360 N.M.	

CB 90 HEX
General Arrangement

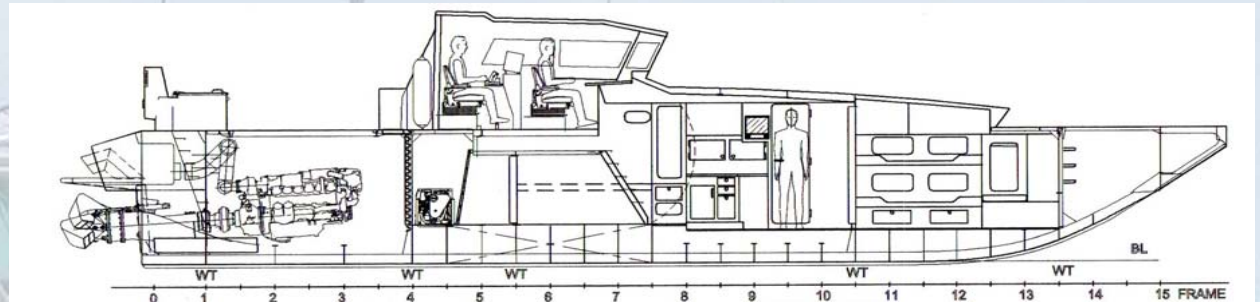




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IC 16 M





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Project 18 M



Project 18 M General Arrangement

